

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	William R. Campbell et al.	Art Unit:	1615
Serial No.:	10/692,979	Examiner:	Levy, Neil S.
Filed:	October 24, 2003	Confirmation Number	1729
Title:	METHODS AND COMPOSITIONS FOR TREATING ECTOPARASITE INFESTATION		

**DECLARATION OF DR. DOUGLAS HEPLER UNDER RULE 1.132**  
**IN SUPPORT OF AMENDMENT**

I, Douglas Hepler, declare as follows:

1. I am the Chief Scientific Officer for Piedmont Pharmaceuticals, LLC., the Assignee of the above-captioned patent application. I have extensive experience in animal immunology, microbiology and parasitology. After completing my doctorate work at Colorado State University, I joined Elars Bioresearch Laboratories, Inc. as director of toxicology, later becoming vice president of Elars' safety assessment division. I also served as a senior research specialist at Ciba Animal Health (later Novartis Animal Health), where I was responsible for developing compounds and concepts into commercially viable animal health products and later became a vice president of the company, with responsibility for managing the company's product portfolio. Subsequently, I co-founded veterinary pharmaceutical company Blue Ridge Pharmaceuticals, Inc., and served as vice president of research and development at IDEXX Pharmaceuticals, Inc., which purchased Blue Ridge in 1998. My work has been published in a number of scientific journals, including the Journal of Animal Science and the American Journal of Veterinary Research.

2. Under my supervision, a study was performed using varying concentration of isopropyl myristate as an active ingredient in a composition to kill ectoparasites. The test protocol was generally as described in Example 2 of the present application, and provided for exposure of the treated lice to the test composition for 10 minutes. The results were as follows:

Formulation Tested	24 Hour % Mortality
Water control	12.0
100% cyclic siloxane (D5)	78.4
15% IPM/85% D5	56.0
35% IPM/65% D5	88.7
50% IPM/50% D5	91.3
100% IPM	100%

3. As demonstrated, the percent mortality among treated lice increases as the concentration of IPM increases. In contrast, even 100% D5 did not produce mortality even as significant as 35% IPM. Based on these data, it can be concluded that IPM is the active ingredient for killing ectoparasites in the test compositions, while D5 served as a spreading agent and carrier. Further, at all concentrations of IPM from 35% and greater, mortality exceeded 82%.

4. At concentrations above 70%, IPM is believed to be toxic. However, the above study shows that sub-toxic concentrations of IPM can be used topically to achieve clinically significant results in killing ectoparasiticial infestations.

5. Further regarding clinical significance, it is notable that even a 35% concentration of IPM has been shown to outperform the top-selling commercial lice treatment in the U.S., RID® (pyrethrin). In a human Phase II clinical trial using the RID product as a comparator, the composition was applied as directed by the manufacturer to the scalps of 52 participants ages 4 to 56 years of age. After 10 minutes, it was washed away. The primary efficacy endpoint was the presence of adult lice 7 days following the last treatment. Only 22% of the RID treated subjects met that endpoint. Although some re-infestation may have occurred over the test period, similar results (16% success rate) were reported in an earlier study.

I declare that all statements made in this declaration of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful, false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of legal decisions of any nature based on them.

December 19<sup>TH</sup>, 2011

Douglas Hepler  
Douglas Hepler